

Patent claims

- 5 1. A film which comprises thermoplastic starch and/or a thermoplastic starch derivative and which is produced from a thermoplastic mixture which comprises a) thermoplastic starch and/or a thermoplastic starch derivative and b) at least one polyester urethane, with the weight ratio a):b) being in the range from 75:25 to 5:95, and which has an area-based drawing ratio of from 2 to 70.
- 10 2. The film as claimed in claim 1, wherein the weight ratio a):b) is in the range from 30:70 to 60:40.
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- 15 SUB A1 3. The film as claimed in claim 1 or 2, wherein the thermoplastic starch derivative is a starch ester, preferably a starch alkanoate, particularly preferably starch acetate.
- 20 4. The film as claimed in one or more of claims 1 to 3, wherein the polyester urethane consists of hard polyurethane segments and soft polyester segments, the segments being arranged in alternating sequence.
- 25 5. The film as claimed in claim 4, wherein the proportion of polyurethane segments in the thermoplastic polyester urethane is from 10 to 90% by weight, preferably from 20 to 50% by weight, in each case based on the total weight of the polyester urethane.
- 30 6. The film as claimed in one or more of claims 1 to 5, wherein the thermoplastic mixture comprises at least one plasticizer, preferably glycerol, diglycerol, sorbitol, polyethylene glycol, triethyl citrate, triethyl acetyl citrate, glycerol triacetate, a phthalic ester or sorbitol monoester or sorbitol diester, the proportion of plasticizer(s) being up to 40% by

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weight, preferably up to 25% by weight, in each case based on the total weight of the thermoplastic mixture.

5 7. The film as claimed in one or more of claims 1 to 6, wherein the thermoplastic mixture comprises at least one lubricant, preferably a vegetable fat or a vegetable oil, a synthetic triglyceride, lecithin, an ethoxylated fatty alcohol or a wax, the proportion of lubricant(s) being up to 12% by weight, preferably from 0.1 to 6% by weight, particularly preferably from 0.2 to 6% by weight, in each case based on the total weight of the thermoplastic mixture.

10 8. The film as claimed in one or more of claims 1 to 7, wherein the thermoplastic mixture is mixed with fibers, preferably fibers from cotton linters, woodpulp, from regenerated cellulose, from hemp, flax, sisal or jute, the proportion of fibers being up to 30% by weight, preferably from 2 to 15, particularly preferably from 5 to 15% by weight, in each case based on the total weight of the mixture.

20 9. The film as claimed in one or more of claims 1 to 8, wherein the thermoplastic mixture comprises fillers, preferably calcium carbonate, talc, kaolin, titanium dioxide, anhydrite, a silicate or fine-grained cellulose particles or starch particles, the proportion of the fillers being up to 30% by weight, preferably from 2 to 15% by weight, particularly preferably from 4 to 10% by weight, in each case based on the total weight of the mixture.

25 10. The film as claimed in one or more of claims 1 to 9, wherein the thermoplastic mixture comprises at least one crosslinker, preferably a dicarboxylic acid, a diisocyanate or triisocyanate, a dialdehyde, a diepoxide, a diimine, or a silane or siloxane containing vinyl group(s), the proportion of crosslinker(s) being up to 10% by weight, preferably

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from 0.5 to 5% by weight, particularly preferably from 1 to 3% by weight, in each case based on the total weight of the mixture.

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11. The film as claimed in one or more of claims 1 to 10, wherein it is hot-sealable.
12. The film as claimed in one or more of claims 1 to 11, wherein it is furnished with an inner and/or outer preparation.
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13. A process for producing a film as claimed in one or more of claims 1 to 12, which comprises blowing the tube which is produced from the thermoplastic mixture by extrusion, the area-based drawing ratio being in the range from 2 to 70, preferably from 4 to 40, particularly preferably from 6 to 20.
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14. The use of the film as claimed in one or more of claims 1 to 12 as packaging film, in particular for foods, preferably as seamless, tubular sausage casing.

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